



8401 Corporate Drive  
Suite 450  
Landover, MD 20785-2224  
TEL (301) 577-3786 / FAX (301) 577-6476  
[www.reusablepackaging.org](http://www.reusablepackaging.org)

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February 3, 2003

Dockets Management System  
U.S. Department of Transportation  
400 Seventh Street S.W.  
Room PL-401  
Washington, D.C. 20590

**RE: Docket Number RSPA 2002-13658 (HM-215E)**

To Whom It May Concern:

The Reusable Industrial Packaging Association (RIPA) is pleased to offer comments on Research and Special Programs Administration (RSPA) Docket HM-215E, "Harmonization with the United Nations Recommendations, International Maritime Dangerous Goods Code, and International Civil Aviation Organization's Technical Instructions." These proposed revisions to the Hazardous Materials Regulations (HMR) would directly affect RIPA members by altering existing provisions and adding new provisions related to industrial package closure and notification, and adding new definitions and requirements for the remanufacture, repair, routine maintenance and marking of intermediate bulk containers (IBCs). The proposed rule also affects packaging manufacturers, reconditioners, distributors and suppliers through proposals affecting the manner in which shippers must close and assess the safety of packagings used for the shipment of hazardous materials.

For over 60 years, RIPA has represented private companies throughout North America that safely collect, remanufacture, manufacture, distribute and recondition millions of non-bulk and intermediate bulk industrial packagings annually. Such packagings include steel, plastic, and fiber drums, as well as intermediate bulk containers. RIPA members account for approximately 90% of the industrial packaging reconditioning business volume in North America, and as much as one-third of industrial packaging manufacturing volume. In addition, RIPA represents many of the nation's leading suppliers of closure devices and parts used in the manufacture and assembly of industrial packagings.

**Introduction**

In the background information accompanying this docket, RSPA points out that it has published five final rules since 1990 aimed at harmonizing the HMR with the UN Model Regulations, the IMDG Code, and the ICAO Technical Instructions. RSPA emphasizes that international harmonization of hazardous materials regulations "serves to facilitate

international transportation and at the same time ensures the safety of people, property and the environment.”

RIPA strongly supports DOT in this effort, and is pleased that Docket HM-215E largely accomplishes this goal with respect to the two areas of primary concern to our association; (1) issues affecting industrial packaging closure, and (2) requirements affecting the remanufacture, repair, routine maintenance and marking of IBCs. RIPA believes, however, that the docket goes too far in attempts to guarantee by regulation the integrity of closures, and fails to incorporate a key marking provision for routinely maintained intermediate bulk containers.

Our comments detail our concerns in these areas and provide specific solutions. RIPA offers comments on proposed changes to provisions affecting shippers’ responsibilities in closing and assessing the safety of industrial packaging. We also request clarification of a provision affecting the reconditioning of plastic drums.

### **General Comments**

Section 173.22(a)(4). This provision would emphasize it is the shipper’s responsibility to ensure that a packaging is in compliance with Parts 173 and 178. RIPA supports the proposed revisions.

Section 173.24(b)(4). This proposed revision outlines the broad responsibilities of shippers with respect to package preparation, including the necessity of ensuring that the package used is adequate to suit the transportation environment it will encounter when filled. RIPA generally agrees with the intent of the new language, but has suggested (1) some minor grammatical corrections to clarify that shippers should be aware of all the conditions their packages are likely to encounter in transport, and (2) wording that would permit shippers to close packages in a manner that differs from the closure instructions provided under 173.28, as long as such procedures are fully documented, and (3) language to ensure that packages closed with tools, e.g., torque wrenches, conform to applicable international standards.

The proposed rule would require packages and inner receptacles must be closed in accordance with the information provided by the manufacturer. As RIPA points out in greater detail later in these comments, we do not believe that all packagings must be closed precisely in accordance with information provided by the packaging manufacturer. However, the wording of the proposal, coupled with our knowledge of the agency’s enforcement practices leads us to believe that shippers could be forced to follow exactly the closure procedures provided by a packaging manufacturer, including the application of closure torques, *despite the fact that this practice may result in a less safe packaging*.

There are circumstances under which packages should be closed in accordance with specific procedures known to the shipper that take into account the nature of material being filled and shipped, the type of packaging and closure being used, and the conditions under which the package is being filled, closed and stored. For example, a package being filled with a hot hazardous material in a very cold climate may have to be closed in a different manner than the

same package being filled in a hot, humid climate. Climatic conditions and product variability do have a measurable influence on the performance of various kinds of packaging materials, including high-density polyethylene, polypropylene, steels and rubber.

Therefore, RIPA recommends that shippers be authorized to use closure procedures, including torque settings, that vary from those provided by the manufacturer or distributor if those procedures and/or torque settings are documented and result in the creation of a package that is safe and meets all other applicable requirements of the HMR.

Most shippers close packages with tools designed for the task, e.g., torque wrenches. This is a convenient and beneficial practice, and there are international standards regarding such practices that should be taken into account in the HMR. In this regard, RIPA suggests that DOT require shippers that do use closure tools to ensure they meet applicable standards, and cite in 171.7 ISO 6789, “Assembly tools for screws and nuts – Hand torque tools – Requirements and test methods.” This international standard specifies allowable variance in the tools used by most shippers to close industrial packagings.

To accomplish these goals, we recommend that section 173.24(b) be amended as follows:

Packagings must be constructed and closed in a manner that prevents any loss of contents that may be caused AS A RESULT OF normal conditions of transportation. SUCH CONDITIONS INCLUDE BUT ARE NOT NECESSARILY LIMITED TO NORMAL VIBRATION RANGES, REASONABLE CHANGES IN TEMPERATURE, HUMIDITY OR PRESSURE, AND PRESSURE CHANGES RESULTING FROM NORMAL ALTITUDE VARIATIONS.

Packagings, including inner receptacles, must be closed in accordance with the information provided by the manufacturer (see 178.2 of this subchapter). ALTERNATE CLOSURE PROCEDURES, INCLUDING TORQUE SETTINGS, ARE AUTHORIZED IF SUCH PROCEDURES OR TORQUE SETTINGS ARE IDENTIFIED AND DOCUMENTED BY THE SHIPPER, AND THE PACKAGES MEET ALL OTHER REQUIREMENTS OF THIS SUBCHAPTER. TOOLS USED TO CLOSE PACKAGES MUST COMPLY WITH INTERNATIONAL STANDARDS. SEE SECTION 171.7.

171.7 International Organization for Standardization

ISO 6789:1992(E) ASSEMBLY TOOLS FOR SCREWS AND NUTS – HAND TORQUE TOOLS – REQUIREMENTS AND TEST METHODS .....178.2(c)

Section 173.24(f)(1). This provision would expand current requirements affecting the design, performance and use of packaging closures. RIPA has two concerns with the proposal. First, it essentially repeats the language used in 173.24(b)(4) regarding closures, but does so in a manner that is inconsistent and confusing. Second, DOT wants to add language that would require a closure device to be “...so designed that it is unlikely it can be incorrectly or

incompletely closed.” RIPA recommends that the closure provisions in 173.24(b)(4) and 173.24(f)(1) be made consistent with one another, and that the language affecting closure design be eliminated.

To assure agreement between sections 173.24(b)(4) and 173.24(f)(1), we suggested the following changes:

The closures of packagings must be constructed to resist the effects of ~~temperature, pressure changes and vibration that occur during~~ CONDITIONS THAT MAY BE ENCOUNTERED UNDER normal conditions of transportation. SUCH CONDITIONS INCLUDE BUT ARE NOT NECESSARILY LIMITED TO NORMAL VIBRATION RANGES, REASONABLE CHANGES IN TEMPERATURE, HUMIDITY OR PRESSURE, AND PRESSURE CHANGES RESULTING FROM NORMAL ALTITUDE VARIATIONS.

With regard to the proposal that closures be designed in a manner that would make improper closure unlikely, RIPA believes that the requirement is so vague that it would almost certainly transfer liability for proper package closure away from shippers (i.e., fillers) to closure manufacturers. For instance, what legal threshold for the term “unlikely” would render a closure’s design inadequate?

Moreover, this proposed provision wrongly presumes existing closure systems are not now designed for ease of use, and that new closure system designs can be quickly developed that (1) somehow meet this vague criteria, (2) comply with all existing safety requirements in the HMR, and (3) would be commercially viable.

RIPA has discussed this issue with member companies that include several of the world’s leading manufacturers of industrial packaging closures. Based upon these discussions, we have concluded that existing closure designs for steel, plastic and fiber drums, and intermediate bulk containers are user friendly, technically and economically practical, and have been proven to be extremely safe in transportation.

Closure mechanisms for drums are the result of over 80 years of innovation, design, and continuous improvement. Closures come in a wide range of designs and sizes for tight head and open head applications. Closures for tight head 55 gallon drums, for example, are generally available in three standard sizes, 3/4”, 1-1/2” and 2”. They may be produced from carbon steel or plastic, be coated or uncoated, include several different types of synthetic rubber or polyethylene gasket materials, feature several different thread designs, and include pressure relief mechanisms. In addition, closures are necessarily two-part systems, comprised of a plug and a flange. The flange – metal or plastic - is mechanically inserted into the drum head or side, and becomes an integral part of the container itself.

Closures used for IBCs are more varied than those used in drum applications. This is due to the fact that IBCs come in a broad array of design types, and include closures through which product is released (e.g., ball valves). The latter fact necessitates the use of varying types of

materials in the manufacture of closures, including steel and plastic, as well as gasket material designed to withstand product contact without degradation.

Manufacturers advise us that they have spent thousands of hours of research, design and testing time, and millions of dollars, to create closure systems that are easy to use and, most importantly, safe. Effort to improve closure performance and ease of use are ongoing and, in fact, are an integral aspect of a firm's performance in this very competitive industry. Additionally, all closure systems are fully tested by manufacturers, and recommended closure procedures and torques are supplied to packaging producers that use these systems.

Based upon our research, RIPA concludes (1) manufacturers of industrial packaging closures are producing state-of-the-art products that ensure the safe containment of hazardous materials when used properly, and (2) existing closure designs for the industrial packagings with which we are familiar (i.e., drums, pails and IBCs), are easy to use by trained HazMat Employees.

RIPA, therefore, requests that DOT delete the following sentence from section 173.14(f)(1):

“The closure device must be so designed that it is unlikely it can be incorrectly or incompletely closed.”

Section 178.2(c)(1)(ii). This proposed paragraph would add new requirements concerning the type and amount of information a packaging manufacturer and/or distributor must provide to purchasers of packagings. Current rules state that manufacturers and distributors must provide written notice “...of the types and dimensions of any closures, including gaskets, needed to satisfy performance test requirements.”

In addition to this information, DOT would ask manufacturers and distributors to include information about “other components” needed for proper closure, “procedures to be followed” to ensure proper closure, and “closure instructions” for inner packagings and receptacles.

RIPA supports the general intent of the new provisions, which appear to track the current wording on closure information found in the UN Model Regulations, and which are intended to help shippers (i.e., fillers) do a better job closing the final package. However, given that the practical application and interpretation of the current requirements has been the source of much controversy in recent years, we believe changes must be made to ensure that existing problems are not exacerbated.

RIPA believes that packaging manufacturers and distributors should be required to clearly describe to shippers the complete closure system needed for proper closure (including closures for inner packagings and receptacles), and the closure procedures used in passing the applicable performance tests.

However, RIPA believes that DOT should recognize two practical realities in the HMR: (1) written closure procedures are essentially guidelines from which shippers can and often do diverge to accommodate site-specific conditions and closure practices (see 173.24); and, (2)

recommended closure torque values may safely be expressed as minimum values, median values, or a range of values.

As noted above, RIPA supports the need for written closure procedures; however, we believe DOT should recognize that it is impossible for a packaging manufacturer to anticipate every conceivable climatic and work condition in which filling may take place (e.g., hot-fill on a cold day, humidity, heat, etc.). The reality of container closure practices is that the manner in which shippers (i.e., fillers) close packagings will often vary from plant to plant. This is due in part to facts as mundane as weather conditions, or as critical as the nature of the material being filled. For example, some shippers will tighten drum plugs just prior to shipping to account for possible expansion of the metal or plastic that results from heat exposure that occurs from the time the drum is filled and the time it is placed on a transport vehicle. Other plants have found no need for such a practice.

RIPA, therefore, requests that DOT permit torque values to be expressed in minimum values, median values, or a range of values. The minimum is the torque value at which a manufacturer certifies the closure will perform safely in transportation. The median is the value around which a standard variance in torque (+/-) may be observed and should be authorized by DOT. [Note: In this regard, we draw DOT's attention to ISO/FDIS 16104, "Packaging – Transport packaging for dangerous goods – Test methods." When finalized later this year, Section 6.3 of the standard will recognize a tolerance in torque measurements of  $\pm 3$  newton meters (Nm) or 10%, whichever is greater.] The range is expressed as upper and lower closure torques at which manufacturers may, if they choose, demonstrate that a closure will perform safely in transportation. All torque values between the upper and lower test points would satisfy performance criteria.

To effect these changes, RIPA suggests the following revisions to 178.2(c):

178.2(c) Notification. Except as specifically provided in 178.337-18 and 178.345-10 of this part, the PACKAGING manufacturer or other person certifying compliance with the requirements of this part, and each subsequent distributor of that packaging shall –

(1) Notify in writing each person to whom that packaging is transferred -

(i) \*\*\*

(ii) information specifying the type(s) and dimensions of the closures, including gaskets and any other components, INCLUDING THOSE FOR INNER PACKAGINGS AND RECEPTACLES IF SUPPLIED BY THE SAME PACKAGING MANUFACTURER OR DISTRIBUTOR, needed to ensure that the packaging is capable of successfully passing the applicable performance tests and the general packaging requirements in Section 173.24 and 173.27 of this subchapter. This information must include any PROCEDURAL GUIDELINES FOR CLOSURE RECOMMENDED ~~procedures to be followed, including closure instructions for inner packagings and receptacles, to effectively assemble and close the packagings for the purpose of~~ BY THE PACKAGING MANUFACTURER OR

DISTRIBUTOR FOR THE PURPOSE OF preventing leakage in transportation....

A) CLOSURE INFORMATION THAT INCLUDES TORQUE VALUE(S) MAY SPECIFY SUCH VALUE(S) AS (A) A RANGE OF VALUES, OR (B) A MEDIAN VALUE, OR (C) A MINIMUM VALUE. THE MANUFACTURER MUST INDICATE WHICH OF THESE OPTIONS IS PROVIDED.

As a further comment, we note that the supplier of packaging would have to provide closure information suitable to ensure it would meet the general packaging requirements of Sec. 173.24. That shipper section advises the filler to design, fill, and close a packaging to meet all the characteristics of the product contents, and all rigors of the mode(s) of transportation the shipper will use.

DOT once before endeavored to make the packaging manufacturer responsible for a shipper's decisions, but backed away from that position once it was considered more thoroughly. The packaging manufacturer knows the properties and capabilities of the packaging as produced, and the closures provided. What the shipper does with that packaging is outside both the ken and control of the packaging supplier.

When this was proposed before in HM-181, DOT responded to negative comments from both shippers and packaging manufacturers. In conclusion, the agency said, "RSPA agrees with commenters that determining suitability for use is essentially a responsibility of the shipper. To clarify this point, proposed paragraph (c) of Sec. 178.2 has been deleted in this final rule." (Docket No. HM-181; final rule; 55 Fed. Reg. 52408; Dec. 21, 1990.) Later in that same publication, DOT said, "In accordance with new paragraph (a)(4) in Sec. 173.22 and Sec. 173.24, the shipper is responsible for making sure that a package is assembled, closed or otherwise prepared for transport in full compliance with the specification or standard under which the packaging was manufactured, including any conditions for use set forth by the manufacturer under the notification provisions of Sec. 178.2(c)." *Ibid.* In HM-215E, the agency once again has proposed the same idea and, for the same reasons, it should again be rejected.

Section 178.812. RIPA supports this proposal that would specify that the IBC top-lift test is to be performed "with the load evenly distributed."

Section 180.350. This section would be substantially revised to include new definitions for "remanufactured IBCs," "repaired IBCs" and "routine maintenance" of IBCs, as well as marking. RIPA strongly supports incorporation of these new definitions, which track almost exactly those adopted by the UN Committee of Experts on the Transport of Dangerous Goods several years ago, and which now have been incorporated in the UN Model Regulations. RIPA was part of an industry drafting group<sup>1</sup> that developed the UN IBC reprocessing provisions, which offered international recognition to the fastest growing part of the industrial

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<sup>1</sup> The group included representatives from the Rigid Intermediate Bulk Container Association, American Chemistry Council, Nalco, Reusable Industrial Packaging Association, International Confederation of Container Reconditioners, International Confederation of Plastics Packaging Manufacturers, International Confederation of Intermediate Bulk Container Associations, and the European Chemical Industry Council.

packaging reuse business. Today, RIPA estimates that more than 1.5 million metal, plastic and composite IBCs are reused annually. A large proportion of these IBCs – estimates run as high as 90% - are composite units with capacities ranging from about 250 to 380 gallons. Most of these units are collected by third-party companies (i.e., reconditioners) for cleaning, refurbishment or scraping.

Recognizing that one of the primary goals of the rulemaking is to harmonize the HMR with the UN Model Regulations, RIPA is deeply concerned that the proposed rule does not include a key provision for routine maintenance of IBCs that was proposed by the industry working group, accepted by the UN Experts, and incorporated in the 12<sup>th</sup> Edition of the Model Regulations.

RIPA believes such a provision should be included for reasons of transportation safety, enforcement, liability and international harmonization.

RSPA's proposed definition of "routine maintenance" includes cleaning, removal and reinstallation of body closures (including gaskets), or of service equipment (e.g., filling and discharge devices, safety and heating devices, etc.), and the restoration of certain types of structural equipment. RIPA believes persons performing these activities do materially affect the manner in which an IBC performs in service, are performing safety related functions and, therefore, should apply a durable identification mark.

In the event that an IBC fails to perform in service as a result of a third-party's routine maintenance activity, enforcement officials should have the ability to locate the person performing the activity and seek corrective action. If persons performing these activities are not required to identify themselves, the ability of DOT enforcement officials to do their jobs will be eroded or worse, made impossible.

Every company and industry organization participating in the drafting effort cited above, including fillers, emptiers, IBC manufacturers and reprocessors, agreed that a mark should be applied by third-party reprocessors to ensure that liability could be properly assigned in the unlikely event of an incident. Fillers who may rely on several IBC reprocessors for their supply of routinely maintained IBCs want to know where problems units were purchased (as do other parties affected by accidental releases in transportation); IBC manufacturers want to ensure that persons that have performed routine maintenance activities on their units are clearly identified; and, third-party reprocessors want to be certain that companies performing any sort of work on an IBC that could affect its performance in transportation are clearly identified. The marking of routinely maintained IBCs helps to assure a certain standard of competent reprocessing, and it reduces or eliminates the ability of less firms unwilling to identify themselves from doing business and possibly endangering public health and worker safety.

DOT should also clarify in the preamble that certain kinds of routine maintenance activities are permitted. Specifically, RIPA believes that power sanding and welding of metal cages of composite IBCs is "restoration of structural equipment not performing a containment function."



Last, RIPA believes that unless there is a compelling safety, economic or trade concern, the HMR should be harmonized with the UN Model Regulations, IMO and ICAO. RIPA does not believe any of these concerns are at risk in this matter, and therefore urges DOT to take this opportunity to fully embrace the UN Model Recommendations.

For these reasons, RIPA recommends that DOT add a new subparagraph (v) to 180.352 as follows:

180.352

(d) \*\*\*

(1) \*\*\*

(v) Except for routine maintenance of metal, rigid plastics and composite IBCs performed by the owner of the IBC, whose State and name or authorized symbol is durably marked on the IBC, the party performing the routine maintenance shall durably mark the IBC near the manufacturer's UN design type marking to show the following:

(A) the County in which the routine maintenance was carried out; and,

(B) the name or authorized symbol of the party performing the routine maintenance.

Section 173.28. Last, we ask that a provision that has caused confusion in the industry be clarified in the final rule. Section 173.28 of the U.S. HMR pertains to reuse of non-bulk packaging for hazardous materials. It also includes provisions on reconditioning. It is drawn directly from Chapter 1.2 of the UN Model Regulations, which includes both steel and plastic drum reconditioning. The same provisions including plastic packagings appear in the ICAO Technical Instructions and the IMO IMDG Code.

Section 173.28(c)(1) says, "For the purpose of this subchapter, reconditioning of a metal drum is..." Sec. 173.28(c)(2) says, "For the purpose of this subchapter, reconditioning of a non-bulk packaging other than a metal drum *or a UN 1H1 plastic drum* [emphasis added] includes...."

Nothing in Section 173.28, however, appears to tell the reader how to recondition a UN 1H1 plastic drum. As adopted in HM-215C, all plastic drum reconditioning was meant to be covered by Sec. 173.28(c)(2). The language of this provision tracks the UN definition of plastic drum reconditioning. Also see final rule in HM-215C (64 Fed. Reg. 10741; March 5, 1999).

A correction to that final rule (64 Fed. Reg. 44425; Aug. 16, 1999) reinserted a sentence for 1H1 plastic drums, to the effect that replacing the gasket alone does not constitute reconditioning. At the same time, however, without notice or explanation, the words, "or a 1H1 plastic drum" were inserted in Section 173.28(c)(2). The result of this insertion was to eliminate all standards for tight head plastic drum reconditioning. We do not think this was intended. This error was not caught at the time, and industry has continued to recondition

plastic drums in a manner consistent with the UN Model Regulations, IMO and ICAO. Nevertheless, the provision has been and continues to be the source of considerable confusion.

We ask, therefore, that this error be corrected in HM-215E, i.e., that the words “ or a 1H1 plastic drum” be deleted from Sec. 173.28(c)(2). Importantly, this would not change the relief for those who only replace the gaskets on a 1H1 drum, because that relief would continue to appear in Sec. 173.28(c)(2)(iii). It would, however, harmonize the U.S. rules with the UN Model Regulations and parallel codes adopted by reference into title 49 CFR, as we believe to have been the intent of the proposals in HM- 215 and 49 U.S. Code 5120.

RIPA appreciates the opportunity to comment on this important rulemaking. Please let us know if further clarification of our comments is needed.

Sincerely,

A handwritten signature in black ink that reads "Paul Rankin". The signature is written in a cursive, flowing style.

Paul W. Rankin  
President

cc: R. Rubin  
L. Bierlein

attachments